

General Engineering B.S. with Computational Modeling Minor					
			For students entering Fall 2024		
First Year - Fall Semester			First Year - Spring Semester		
Course	Title	Credits	Course	Title	Credits
CHEM 121/L CORE course 9	General Chemistry I / CORE 9 NatSci	4	CHEM122	General Chemistry II	4
MATH 121 CORE course 8	Calculus I / CORE 8 Quant	3	MATH122	Calculus II	3
ENGR 101 CORE course 1	Engineering CORE 1 (Foundations)	3	PHYS121	General Physics I	4
CORE course 5	History	3	ENGR102	Introduction to Engineering II	1
CORE course 3	WRIT 102, Research Writing	3	CORE course 7	Literature	3
ENGR192	Freshman Engineering Seminar	0	CORE course 2	FTAE 105, Intro to Franciscan Theology	3
			ENGR193	Freshman Engineering Seminar	0
	Total	16		Total	18
Second Year - Fall Semester			Second Year - Spring Semester		
Course	Title	Credits	Course	Title	Credits
MATH221	Calculus III	3	MATH306	Differential Equations I	3
PHYS122/L	General Physics II	4	ENGR202	Engineering Dynamics	3
ENGR210/L	Programming for Eng (1 hr lec, 2 hr lab)	2	ENGR315/L	Mechanics of Materials	3
ENGR201	Engineering Statics	3	ENGR325/L	Fundamentals of Electrical Eng (2hr L)	4
ENGR250	Solid Modeling and CAD	3	ENGR279	Sophmore Engr. Design for Service	2
ECON 101 CORE course 4	Economics / CORE II, Civic responsibility	3	CORE course 11	Religion or Philosophy *EOY with MATH 212	3
ENGR292	Sophomore Engineering Seminar	0	ENGR293	Sophomore Engineering Seminar	0
	Total	18		Total	18
Third Year - Fall Semester			Third Year - Spring Semester		
Course	Title	Credits	Course	Title	Credits
MATH322	Linear Algebra	3	ENGR335	Engineering Instrumentation (1 lect 1 lab)	1
ENGR301/L	Fluid Mechanics	4	ENGR375	Heat Transfer	3
ENGR321	Applied Engr. Thermodynamics	3	ENGR379	Junior Engr. Design for Service	3
ENGR350	Materials Science	3	MATH309	Mathematical Modeling *EOY in senior year	3
CORE course 6	Social Science (Human Geography if approved) *EOY with MATH 312	3	MATH212	Approximation Methods I *EOY with CORE course 11	3
ENGR392	Junior Engineering Seminar	0	ENGR497	Capstone Design Proposal	1
			ENGR393	Junior Engineering Seminar	1
	Total	16		Total	15
Senior Year - Fall Semester			Senior Year - Spring Semester		
Course	Title	Credits	Course	Title	Credits
ENGR427	Power/Thermal Systems Lab	1	ENGR498 CORE course 15	Capstone Design / CORE 15 (needs approval)	3
ENGR415	Senior Lab	3	ENGR407 CORE course 14	Sustainability in Engineering Design / CORE III / CORE 14	3
MATH312	Approximation Methods II *EOY with CORE course 6	3	CORE course 12	Fine Arts	3
CPSC402	Algorithm Design and Analysis	3	ENGR410	Applied Finite Element and Volume Modeling	4
CORE course 13	Ethics	3	ENGR493	Senior Engineering Seminar	0
CORE course 10	Language / Culture	3			
ENGR492	Senior Engineering Seminar	0			
	Total	16		Total	13
	Courses for CORE curriculum			Total credits	130
16	Courses for the minor			*EOY = every other year offering	

Computational Modeling Minor: (16 credits)

The Computational Modeling Minor should appeal to General Engineers with a desire to develop computational or numerical design programs that may be used by other engineering disciplines or concentrations (especially robotics and mechanical). Students gain adeptness in computational modeling skills, mathematical solution methodologies and specialized computer programming.

- [ENGR 410 - Applied Finite Element and Volume Modeling](#)
- [MATH 309 - Mathematical Modeling](#)
- [MATH 212 - Approximation Methods I](#)
- [MATH 312 - Approximation Methods II](#)
- [CPSC 402 - Algorithm Design and Analysis](#)

Credits in the General engineering central requirements =	87
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Credits in the CORE curriculum	
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Credits in the Minor = 16	
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Total credits =	130
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